Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	))))	
Closed Captioning of Video Programming	)))	CG Docket No. 05-231
Telecommunications for the Deaf, Inc. Petition for Rulemaking	)))))	

COMMENTS OF THE
WGBH NATIONAL CENTER FOR ACCESSIBLE MEDIA
(NCAM)
November 10, 2005

Submitted By:
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The WGBH Educational Foundation's National Center for Accessible

Media (NCAM) hereby submits comments on the Commission's Notice

of Proposed Rule Making in the proceeding noted above concerning the

closed captioning of television programs.

Summary

1. The FCC has asked for comment on the current status of the Commission's closed captioning rules, including the captioning of analog and digital television broadcasts, cablecasts and satellite-delivered programming and whether any revisions should be made to enhance the effectiveness of the closed captioning rules.

2. The FCC has asked for comment on several compliance and quality issues relating to closed captioning that were raised in a Petition for Rulemaking filed by Telecommunications for the Deaf, Inc. (TDI), et al.

3. The WGBH National Center for Accessible Media concurs with much of what the petitioners point out as failings in both the Commission's rules and in the industry's delivery of high-quality captioning services. The marketplace has not acted to drive improvement in technical and non-technical quality assurance; quite the opposite has occurred. Competition in the marketplace has caused prices to drop precipitously causing inadequate attention to Quality of Service. With a weakly functioning feedback loop between caption consumers and the regulated entities, technical and non-technical problems have become pervasive.

Introduction

4. The WGBH Educational Foundation is one of the country's leading public broadcasters and has long considered one of its central missions to be increasing access to media for people with disabilities.

5. In 1971, WGBH established The Caption Center, the world's first captioning agency, to produce captions for TV programs so that deaf and hard-of-hearing viewers could gain equal access to those programs. Today, The Caption Center is part of WGBH's Media Access Group and produces captions and subtitles for every facet of the television and home video industry in addition to CD-ROM and Web-based multimedia and conventional and large-format theatrical motion pictures and theme park attractions.

6. The WGBH Media Access Group also houses WGBH's Descriptive Video Service® (DVS®) which makes television programs and movies accessible to people who are blind and visually impaired. WGBH developed DVS in 1990 and continues to lead the world in creating accessible electronic media for people with disabilities.

7. The WGBH National Center for Accessible Media (NCAM) is the research and development and policy arm of the Media Access Group at WGBH. NCAM was founded in 1993 to build on WGBH's knowledge base in the field of access technologies.

Non-technical Quality Standards for Closed Captioning – The Marketplace Has Not Corrected Problems

8. When the FCC adopted the closed captioning rules in 1997, it declined to set non-technical quality standards, and instead encouraged video programming providers to establish standards through their arrangements and contracts with captioning. The FCC assumed that program producers would strive for high quality captioning via their contracts stating that, "consumers can demonstrate their satisfaction or lack of satisfaction with what is shown through their purchase of advertised products, subscriptions to programming services, or contacts with the video programming providers or video programmers."

9. The first assumption – that consumers can demonstrate their satisfaction or lack of satisfaction with what is shown through their purchase of advertised products – is a faulty assumption and would be unlikely to yield changes in caption quality in any case. In the

eight years since the closed captioning rules went into effect, there
has been no organized boycott of an advertiser's product by
consumers to demonstrate their displeasure with the quality of a
program's captions. In addition, the number and diversity of
advertisers on a TV program would require an intense and national
coordination effort to have any effect – an effort that should not be
required of caption consumers to correct quality concerns.

10.   The second assumption – that consumers would exert pressure on
program providers by canceling their subscriptions to program
services – also assumes a marketplace strength that caption
consumers simply don't have. This assumption also requires
consumers to punish themselves by eliminating their entire pipeline
to information and entertainment because of the problems
generated by a few bad actors.

11.   If a la carte selection of cable channels was an option to
consumers, this approach to consumer feedback and control might
have some effect. But a consumer can't simply cancel a single basic
cable channel that might be providing low-quality captions and
receive a rebate on his cable bill. The cable industry has clearly

expressed their opposition to such a la carte services, so consumers don't have subscription cancellations as a means of protest.

12.   In fact, the feedback loop between caption consumers and program providers and producers is very weak. Communication between caption consumers and program distributors requires clear points of contact, widely published voice and TTY numbers and knowledge of relay services, staffing into the prime-time and night-time hours, and knowledge and understanding of caption quality issues by program providers, local cable operators and local TV stations. Without those means of communication and points of contact, it's no wonder that complaints rarely reach the providers. Without such a feedback loop, many providers may assume that a low-cost and low-quality captioning service is adequate, not hearing otherwise from consumers.

13.   Complaints from consumers more frequently arrive on the doorstep of the captioning agency, which may or may not be responsible for faulty caption services. That caption agency is reliant on the good will of their clients and has an inherent conflict in bringing complaints to the large corporations which are funding them.

Non-technical Quality Issues - Standards

14. NCAM believes that the Commission should indeed establish standards for non-technical quality of closed captioning. Without such standards, levels of accuracy, completeness and error-rates can and will result in incomprehensible captioning at times, with no recourse for the consumer.

Non-technical Quality Issues - Error and accuracy definitions

15. In responding to this NPRM, many will argue that setting and monitoring clear measures of accuracy and errors is untenable or impractical. But as the Commission's rules stand today, a program provider can leave out every other word and still be in compliance with FCC rules. Captions can consist of nothing but garbled letters and would meet FCC rules. Captions can drop out and disappear every two minutes and five minutes before the end of a program and FCC requirements would still be met.

16. Clearly some common-sense and simple standards must be applied as the Commission's caption requirements become complete as of January 1, 2006. There can be some variation in accuracy rates for live vs. off-line, or pre-produced captioning. But basic requirements for creating comprehensible captions need to be put in place so that

caption consumers don't find themselves forced to accept the least-common-denominator, lowest-level of service, determined only by how little a program provider is willing to pay.

17. Though measurable standards can be debated, they are needed, and the following parameters can be a starting point for measures of quality, accuracy and completeness:

- Accuracy of transcription, spelling, grammar and punctuation
    - o for off-line captioning (non-live programming):
        - 100% accurate transcription (text matching audio)
        - 100% accurate spelling
        - Grammar should mirror audio (if incorrect grammar is spoken, it should be reflected in the text)
        - Punctuation should be employed for comprehension and follow commonly accepted rulebooks such as "Elements of Style" by Strunk & White[1] or the "Chicago Manual of Style"[2]
    - o for real-time captioning (live programming):
        - Accuracy rates should be 99% or above, calculated as follows:

            The total number of all words in a program minus the total number of all errors in that program divided

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[1] The Elements of Style, Fourth Edition, Longman (January 15, 2000)
[2] University Of Chicago Press; 15th edition (August 1, 2003)

by the total number of all words in that program.

For example, if there were 100,000 total words in a program and 1,400 errors in that program, the Accuracy Rate would be 98.6% calculated as follows: 100,000 minus 1,400 = 98,600; 98,600 divided by 100,000 = 98.6%.

- Errors should be defined as instances when the words spoken in the audio portion of the program are not matched by the corresponding text.

- Grammar should mirror audio (if incorrect grammar is spoken, it should be reflected in the text)

- Punctuation should be employed for comprehension and follow commonly accepted rulebooks such as "Elements of Style" by Strunk & White or the "Chicago Manual of Style."

- Speaker identification:
  - In off-line programs, either placement of captions should indicate who is speaking or speaker identifications should be employed, or both. For example:

    Mr. Smith:

    I never knew that.

    Mrs. Smith:

    Now you know.

- For real-time programs, speaker IDs should be employed. For example:

    >>> President Bush: Today, I am announcing a new program…

- Identification of nonverbal sounds, i.e. sound effects, music should be required. For example:

    (*gunshots*)

    (*"Star Spangled Banner" playing*)

- Identification of speaker if speaker is not on screen should be required. For example:

    (Mr. Smith, speaking off-screen:)

    How was I supposed to know that?

- Caption styles should be used based on program type (i.e., pop-on captions with placement and/or speaker IDs for dramatic and comedy programs and movies, roll-up captions for talk shows, documentaries, news)

- Verbatim or near verbatim captions should be used for programs produced for teenagers and adult audiences

- Edited captions should be employed for programs intended for young children with slower reading abilities and smaller

vocabularies should be used for programs produced for young children

- Completeness of captioning – the entire broadcast of the program must be captioned to count toward the appropriate benchmark (this is also a technical quality issue related to the successful broadcast of captioned programming)

- Type font should not be a consideration of these rules as type font is not determined by the caption data sent by the broadcaster, nor is it controlled by the regulated program provider. Type font for captions is determined by, and can be adjusted in some cases within, a television's caption decoder.

Costs

18. Caption prices have fallen dramatically since the Commission first instituted its captioning rules. The main cost of producing captions is in staffing, where costs have risen at least at the rate of inflation. There need be no dramatic increase in costs to program providers and distributors that are working with companies that presently provide high-quality captions. There are an adequate supply of such caption providers and more can meet higher levels if required to do so. Costs may increase for those program providers who have thus far hired caption providers who do not employ rigorous quality

standards. Should the FCC set non-technical quality standards for captioning, it is possible that these lower-quality caption providers may need to spend money on additional staff, better staff training, technical resources, and quality assurance. Whether they choose to pass those additional internal costs onto the program providers is their choice.

19.   Certainly, program providers spend adequate and significant sums to assure high-quality audio recording, editing, processing, and transmission; to caption consumers, high-quality captioning is analogous.

Responsibility

20.   Programming distributors are responsible for meeting the mandate for captioned television and should therefore be held responsible for the quality of the captions they purchase and disseminate. The program distributors can meet that responsibility by requiring the program producers to provide quality captions when delivering the program. This requirement for quality captions can be added to the rights agreements between the program producers and the program distributors. Contracts between caption vendors and their clients can and should include quality of service requirements.

21. NCAM agrees with TDI that programs that do not meet the quality standards for pre-produced or live programming should not be counted as captioned for the purposes of meeting the FCC's captioning requirements.

22. Further, the programming distributors should be responsible for monitoring the quality of the captions as they are broadcast to ensure the captions are being broadcast successfully and that they meet the FCC's standards for quality. This is one way in which the program distributors can certify that they are meeting the FCC's benchmarks for captioned programs and that the captions are of high quality.

Technical Quality Standards

23. Additional technical quality standards can be established as well.
   - The "pass-through" rule

   The examples of technical problems cited in TDI's petition are a combination of issues that fall under the FCC's "pass through requirement" as well as a mix of technical and administration problems. They all can be solved by greater attention to the caption data stream and heightened monitoring.

- Captions turning off before the end of national network programming.

This is a technical error most often caused by local broadcast and cable stations and occurs most often on national programs that are immediately followed by a local news program. At approximately ten minutes before the hour, when the local news program is scheduled to begin, the local station allows their live stenocaptioner access to the broadcast signal so that the connection between stenocaptioner and the station's caption encoder can be tested. This test takes place during a commercial break. To avoid this problem, the stenocaptioner must send a "clear" signal to the encoder at the end of the test or otherwise the program's captions will be blocked.

A similar technical error is sometimes made when the local station changes the routing of the network television signal as it prepares to switch over to the local news – to the news studio and its control room. If the captions are not also routed along with the video, the captions are lost.

- Captions disappear one hour into a two-hour movie

This loss of captions could be caused by any number of reasons – incomplete or faulty encoding of the master tape, data stripping somewhere in the signal chain, inadvertent operator error at the local station and other possibilities. In any case, the engineer on duty should log the loss of captions at the local station level, so that it may be investigated further up the broadcast chain. For this to be a reliable solution, the engineering staff needs to be charged with monitoring the quality of captions as they are broadcast.

The following items may or may not fall under the FCC's pass through requirement, although they are legitimate concerns regarding the technical quality of captioning; monitoring by the regulated entity can help assure these problems can be readily rectified.

- Captions are absent, although TV programming schedules label the show as captioned

This captioning issue could be technical – i.e., the local broadcaster is blocking the captions somehow – or it could be an administrative (listing) problem. Local television stations rely on television program listing services to accurately publish and disseminate information about television programs – when they will air, program descriptions, etc., as well as technical information about the

program. This technical information might include whether the program is available in stereo, with a Spanish audio track, with video description, with captions. If the program listing service's database is incorrect, then the local television listings will be incorrect. This administrative error is not necessarily the local broadcaster's since the television listings service companies compile their information from many different sources.

- Captions are illegible, including white boxes and overtypes

Illegible captions of this sort are most likely caused one of two ways:

1. Encoding errors – captions were incorrectly encoded onto the program master resulting in decode errors when the captions are received by the television's caption decoder.
2. Reception problems – if the television reception is poor, then the caption decoder will have difficulty decoding the caption data.

- Captions appear on a national program in one locality but not another

This lack of captions could be caused by any number of reasons. At the local station level, the engineer on duty should consult the

program log to determine whether the program is expected to air

with captions (as most will after January 1, 2006). If a program is

supposed to have captions and doesn't, the engineer should log the

lack of captions, so that it may be investigated further up the

broadcast chain. Again, this requires that the engineering staff

must be charged with monitoring the quality of captions as they are

transmitted.

- Captions are missing from repeats of previously aired captioned
  programming or are scrambled and unreadable

Most likely, these programs were changed - edited or compressed -

after their initial broadcast. As the FCC captioning rule is currently

written, these changes to the program video are considered

"reformats" and therefore are exempt from the existing captioning

rules. The TDI petition asks for a change in this rule and we agree:

if the FCC's goal is to provide deaf and hard-of-hearing consumers

with 100% accessible captioning of programs, then reformatted

programs should not be exempt from the captioning rule.

- Monitoring of Captions

NCTA's argument that it is unnecessary and impractical for the

Commission to require constant monitoring of local and national

cable TV equipment for proper caption carriage ignores the fact that

cable operators already monitor their signals for numerous other

technical parameters (audio levels, video levels, noise, etc.), all of

which, like captioning, can be automated with simple equipment

presently on the market[3]. In addition, each local broadcaster

monitors the broadcast of its own signal as it airs and the same

automated caption monitoring equipment can be readily added to

their signal transmission chain.

By the same token, program distributors must ensure that a

program advertised to be closed captioned is indeed closed

captioned. This may become less of an issue as virtually all

programs will soon be required to be captioned and technical

quality assurance will assure that existing captions will be delivered

intact to the consumer.

Complaint Procedures

24. The complaint procedures as currently written in the FCC mandate

for captioned television are indeed onerous and lack essential

timeliness. The Commission should establish shorter complaint and

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[3] For example, eeg enterprises' DM201 Station Monitor allows you to verify primary language closed captions; the Norpak Corporation's WHAZ-it Monitor is a signal data content auditor that allows broadcasters and network operators to see exactly what data is reaching the viewer; the Evertz Microsystems' 7760CCM can be used to monitor VBI content for pre-distribution monitoring or regulatory compliance.

response times. We agree with the TDI petition that suggests the following change in complaint procedures:

the Commission should revise the complaint procedures set forth in Rule 79.1(g) to establish two categories of complaints: (1) complaints regarding the number of hours captioned in a quarter (to which the video programming distributor may wait to respond until 30 days after the end of the relevant calendar quarter or 30 days after the complaint is filed, whichever is later); and (2) complaints regarding other captioning issues not related to the number of benchmark hours, (including, but not limited to technical problems resulting in missing captions or garbled captions, for example) to which the video programming distributor must respond within 30 days after the complaint is filed.

25. TDI's suggestion of adding an on-line complaint form to the FCC's web site is a good one. FCC staff has already encouraged consumers to copy the FCC on any e-mail complaints sent to broadcasters. This informal method of communicating issues to the FCC would be more effective if the FCC were the entity to which the complaints were sent originally. The FCC can more effectively

enforce the mandate by dealing directly with stations when consumer complaints are received.

Accessibility of Contact Information

26.   To facilitate communication between caption consumers and program providers, it would be very helpful to require program distributors to include the phone number and e-mail address for the distributors' customer service departments on their web sites, and on invoices for subscription services. A separate and dedicated point of contact for caption issues only within the customer service department is not necessary unless the broadcaster wishes to receive their complaints in that fashion. Customer service departments in other industries require consumers to categorize the type of issue they are inquiring about as part of their on-line e-mail form. The program distributors may choose a similar approach as a way of expediting the responses to those e-mails.

Standardized Captioning Complaint Form

27.   A standardized form would be exceedingly helpful to both the consumer and the program distributor. To work to its best advantage, the form should be designed so that it is user friendly while still providing enough detail to help the program distributor

easily pinpoint the most likely reason for the reported problem. The

template provided by TDI in its petition would serve the purpose

well.

Compliance Reports

28.   The FCC should require a compliance report from program

distributors – exempt and non-exempt program distributors. For

exempt program distributors, the report would be a statement

stating the reasons the program distributor is exempt from the FCC

mandate with an estimated date for when that distributor would

begin to disseminate captioned programming. This would provide

the FCC with a mechanism for tracking those program distributors

that are not currently required to broadcast captioned programming

but which will at some point in the future.

29.   For non-exempt program distributors, the report would be a

certification that all programs requiring captioning aired with

captions during the previous quarter with a separate report listing

any problems with the transmission of captions and how those

problems were addressed.

30. Certification from program providers that the programs they are delivering to distributors are captioned would suffice. But use of the automated equipment discussed previously would help create a factual record as to where and when captions did or did not appear.

Use of Electronic Newsroom Technique (ENT)

31. Currently, the FCC limits the use of ENT captioning to:

   - Television stations outside the top 25 markets

   - Television stations that are not owned and operated by the major broadcast television networks

   - National nonbroadcast (cable) networks that serve less than 50% of all homes subscribing to multi-channel video programming services.

The Commission itself has stated that, "it would eventually phase out its recognition of ENT captioning."

32. As TDI indicates, use of unassisted ENT news captioning can leave more than half of a newscast uncaptioned due to the fact that key portions of a newscast are unscripted (breaking news, weather, sports, live interviews). ENT captioning can be supplemented my manual transcription of unscripted material – and at times even a summary would suffice. Such an intermediate level of news

captioning should be attempted to determine whether captioning

gaps are adequately filled.

33. If not, the limits on use of ENT captioning should be narrowed so

that more consumers may have complete captioned access to

programs that are broadcast live and require live, real-time

captioning. These changes could be made over a period of time

similar to the benchmarks originally designed to increase the

amount of captioned television.   At the end of the benchmark

period, the following limits would be in place:

- Television stations in markets between #25 and 50, eventually

  extending to the top 100 markets.

- Television stations that are not owned and operated by the

  major broadcast television networks or owned and operated by a

  corporation with more than ten broadcast television stations

- National nonbroadcast (cable) networks that serve less than

  25% of all homes subscribing to multi-channel video

  programming services.

34. By allowing broadcasters and cablecasters as many as six years to

expand their captioned news offerings, they will have sufficient time

to allocate financial resources to obtain any needed equipment and staff or secure captioning services from an outside vendor. It may be possible that speech recognition software will advance far enough during that time to obviate the need for a full-time stenocaptioner, and depending on the cost of such speech recognition software, have a positive effect on the broadcaster's annual budget.

Availability of Captioners

35. The number of captioning agencies has increased since the FCC's mandate for captioned television went into effect. Most of these newer captioning agencies specialize in providing real-time captioning services. While there are not currently enough stenocaptioners to provide real-time captioning services for every local television station in the United States, the number of trained and qualified stenocaptioners will undoubtedly increase due to marketplace demands. The National Court Reporters Association (NCRA) advocates real-time captioning as part of a court reporter's training. The NCRA has been active in promoting the field of real-time captioning to its members and has worked hard on Federal legislation that will provide competitive grants to train and expand the number of qualified stenocaptioners.
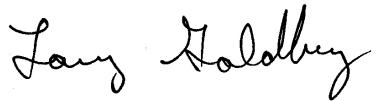
36.   Successful captioners for pre-produced programs do not require

the same level of physical and technical skills that is required of

stenocaptioners. Well-qualified captioners for pre-produced

programs must have excellent grammar and spelling skills as well as

a wide range of world knowledge.   Most caption vendors have no

difficulty finding and hiring qualified candidates for every caption

writing or editing position available.

37.   As stated earlier in this document, there are hundreds of

captioning agencies operating in the United States. Should the FCC

adopt quality standards for captioning, it will raise the

professionalism of the field, create more opportunity for

advancement and growth for those companies with smaller, perhaps

less well-trained staffs, and support those companies that already

excel. The supply of captioners is sufficient but the quality of the

product they produce will change – it will improve.

Conclusion

38.   With the final phase of the FCC requirement for virtually 100% of all TV programming to be captioned nearing, it is time for the FCC to consider and institute rules for both technical and non-technical quality control of captioning. The Commission's captioning rules will fall short if improvements aren't made to the complaint process, monitoring procedures, pass-through and reformat rules, and especially accuracy and error rates. Though the establishment of quantitative measurement of errors may seem daunting, such benchmarks can be set and monitored by all concerned parties: consumers, program producers, program distributors and caption providers.

39.   Automated and manual checks can be employed and contracts can be drawn to enforce appropriate accuracy rates. The labor and industry marketplace will expand to meet the demand for high-quality workmanship and caption agencies won't be pushed into cutting corners due to ever-falling prices for their services.

40.   Consumers have loudly stated their concerns about how Congress' intent has been eroded. It is time for the Commission to step in to

assure minimum levels of quality and delivery of closed captioning services.

Respectfully Submitted,

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